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Reply

We thank Dr. Mottram and colleagues for their interest in our paper (1). In their correspondence, they highlight the current lack of consensus over the noninvasive diagnosis of heart failure with normal ejection fraction (HFNEF). We believe this dilemma represents the combined result of ongoing debate about the pathophysiology of HFNEF together with the fact that present guidelines utilize only resting echocardiographic or hemodynamic measurements (2), even though symptoms principally develop during physical activity. In our cohort of HFNEF patients with markedly reduced peak oxygen consumption, there was a rapid rise in left ventricular (LV) filling pressure at low workload, consistent with the hypothesis that the key abnormality in HFNEF is a steep LV pressure-volume relationship (1,3,4). Of note, our patients had a normal resting pulmonary capillary wedge pressure (PCWP) similar to that reported by others (3), possibly due to the presence of concomitant medication.

Dr. Mottram and colleagues suggest that left atrial (LA) volume should be considered a key measurement in the diagnosis of patients with possible HFNEF, and that it could even be used as an eligibility criterion for entry into HFNEF studies. We believe that reliance on such a structural discriminator is unwarranted. Clearly, LA enlargement develops progressively as a reflection of a sustained increase in LV end-diastolic pressure, for example, in patients with advanced HF due to systolic dysfunction. In our study, resting PCWP was normal, providing a possible explanation for the relatively normal LA size. Moreover, the use of inhibitors of the renin-angiotensin-aldosterone axis is known to reduce LA size in this patient group (5). Accordingly, we suggest that in some HFNEF patients, there is only an episodic rather than chronic increase in LA pressure, which is not sufficient for the induction of LA dilation, thus limiting its utility in the diagnosis of HFNEF.

Taken together, we suggest that diagnostic utility of measurements performed only at rest (particularly parameters that are highly load-dependent) for the evaluation of the HFNEF patient is limited. As a corollary, we further encourage the inclusion of exercise hemodynamic measures into the diagnostic evaluation in patients with possible HFNEF.

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